REMARKS

Claims 1-7 are pending in the present application as amended. Additionally, Applicant has amended claim 2. Consequently, Applicant respectfully submits that claims 1-7 are now in a condition for allowance or in better condition for an appeal.

Response to 35 U.S.C. §112 Rejections

The Examiner rejected claim 2 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, at claim 2, lines 12-15, the phrase "so that rays from said subject to the different portions of the image-capturing region of said single image-capturing device so that rays from said subject are reflected by the imaging-side reflection means". Applicant respectfully submits that the 25 U.S.C. §112 Rejection has been appropriately addressed by the above claim amendment and that claim 2 is in condition for allowance.

Response to 35 U.S.C §103 Rejection

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable

expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Sekine et al. in view of Miyakawa et al.

The Examiner rejected claims 1 and 5 under 35 U.S.C. 103(a) as being unpatentable over Sekine et al., U.S. 5,907,434 (the '434 patent) in view of Miyakawa et al., U.S. 5,028,994 (the '994 patent).

The Examiner stated in the rejection that "at least a lens (111, 112 of Figure 8) provided to be closer to the image capturing device than the closest reflection means to the subject among the reflection means...." The image-capturing device in FIG. 8 of the '434 patent are the CCDs 121 and 122. The reflection means are the total reflection mirrors 118 and 119. Items 801 and 802 are described in the '434 patent as variable apical-angle prisms (column 11, line 59). A property of a prism is to bend light, not reflect light. Items 111, 112, 116, and 117 of the '434 patent are lens that pass light. Finally the items 114 and 115 are described as "stops" (column 6, lines 40-42. The only items that reflect the image are the total reflection mirrors 118 and 119. Therefore, the lens 111, 112, 116, and 117 are NOT closer to the image capturing deice than the closest reflection means 118 and 119.

In claim 1 of the present application, Applicant claims "at least a lens provided to be closer to said single image-capturing device than the closet reflection means...." As explained above, the lens 11, 112, 116, and 117 are not closer to the single image-capturing device than the closet reflection means. Therefore, the '434 patent fails to describe the claim limitation as claimed by Applicant. Further, the combination of the '434 patent with the '994 patent similarly fails to describe or teach the claim limitation.

The '434 patent utilizes two CCDs to record the image while the '994 patent relies on a single TV camera. Therefore, the likelihood of success of combining the two references is lacking. The lens configuration for generating a three dimensional imaging apparatus using a single camera is different than using two cameras and electrically combining the image as in the '434 patent. Therefore, there is little likelihood of success in combining the '434 patent and the '994 patent and such a combination would be in operable.

Thus, claim 1 and all claims that depend from claim 1, dependent claims 3-6, are in condition for allowance.

Sekine et al. in view of Miyakawa et al., and further in view of Ishihara and Tabata et al.

The Examiner rejected claim 2 under 35 U.S.C. 103(a) as being unpatentable over Sekine et al., U.S. 5,907,434 (the '434 patent) in view of Miyakawa et al., U.S. 5,028,994 (the '994 patent), and further in view of Ishihara, U.S. 5,737,084 (the '084 patent) and Tabata et al., U.S. 6,177,952 (the '952 patent).

The argument made above with regards to the '434 patent and the '994 patent are reiterated with regards to independent claim 2. Applicant claims "the diaphragms are provided to be closer to said subject than the lens and in which when each optical path has a lens unit...." Therefore, the combination of the above references fails to teach or describe all claim limitations and there is little likelihood of success in combining references with one and two CCDs or cameras.

Thus, claim 2 as amended is in condition for allowance.

Sekine et al. in view of Miyakawa et al., and further in view of Tabata et al.

The Examiner rejected claims 6 and 7 under 35 U.S.C. 103(a) as being unpatentable over Sekine et al., U.S. 5,907,434 (the '434 patent) in view of Miyakawa et al., U.S. 5,028,994 (the '994 patent), and further in view of Tabata et al., U.S. 6,177,952 (the '952 patent).

The argument made above with regards to the '434 patent and the '994 patent are reiterated with regards to independent claim 7. Therefore, the combination of the above references fails to teach or describe all claim limitations and there is little likelihood of success in combining references with one and two CCDs or cameras.

Thus, claim 7 as amended is in condition for allowance.

Conclusion

In view of the foregoing discussion and analysis, Applicant respectfully submits that claims 1-7 as now presented, are in a condition for allowance, which action is earnestly solicited.

Respectfully submitted,
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CLEAN COPY OF THE AMENDED CLAIM

2(Twice Amended). A three-dimensional image-capturing apparatus comprising:

a single image-capturing device;

a plurality of imaging-side reflection means having reflectors provided to be obliquely outward for a plurality of different portions of an image-capturing region of said single image-capturing device;

a plurality of subject-side reflection means having reflectors provided, for the imaging-side reflection means, outer from the imaging side reflection means so as to be oblique with respect to a subject, the subject-side reflection means reflecting rays from said subject to the corresponding imaging-side reflection means;

a plurality of lenses or lens units provided to be closer to said single image-capturing device than the subject-side reflection means in optical paths formed from said subject to different portions of the image-capturing region so that rays from said subject to the different portions of the image-capturing region are reflected by the imaging-side reflection means, the lenses or lens units forming a plurality of images of said subject which have parallax; and

a plurality of diaphragms in which when each optical path has a lens, the diaphragms are provided to be closer to said subject than the lens and in which when each optical path has a lens unit, the diaphragms are provided to be closer to said subject than a lens of the lens unit.